

WHAT IS CLAIMED IS:

1. A golf club head satisfying the following three conditions in a moment M of inertia around a center line of a shaft axis ($\text{g}\cdot\text{cm}^2$) and a depth L of center of gravity (mm):

- (1) $4000 \leq M \leq 7000$;
- (2) $30 \leq L \leq 50$; and
- (3) $M \leq 200 \times L - 2000$.

2. The golf club head according to claim 1, further satisfying the following two conditions:

- (4) $M \leq 200 \times L - 2390$; and
- (5) $M \geq 200 \times L - 4500$.

3. The golf club head according to claim 1, further satisfying the following condition:

- (6) $4420 \leq M \leq 6500$.

4. The golf club head according to claim 1, further satisfying the following condition:

- (7) $4600 \leq M \leq 6000$.

5. The golf club head according to claim 1, further satisfying the following condition:

- (8) $34 \leq L \leq 45$.

6. The golf club head according to claim 1, further satisfying the following condition:

$$(9) \quad 37 \leq L \leq 42.$$

7. The golf club head according to claim 1, further satisfying the following two conditions:

$$(10) \quad M \leq 200 \times L - 2050; \text{ and}$$

$$(11) \quad M \geq 200 \times L - 5000.$$

8. The golf club head according to claim 1, further satisfying the following two conditions:

$$(12) \quad M \leq 200 \times L - 3450; \text{ and}$$

$$(13) \quad M \geq 200 \times L - 4500.$$

9. The golf club head according to claim 1, comprising:

a face portion forming a hitting face hitting a ball;

a crown portion extending from an upper edge of the hitting face and forming an upper surface of the head;

a sole portion extending from a lower edge of the hitting face and forming a bottom surface of the head;

a side portion extending between the crown portion

and the sole portion from a toe side edge of the hitting face to a heel side edge of the hitting face through a back face; and

a neck portion formed with a shaft insertion hole to which one end of a shaft is attached, wherein

in a measuring state where an axial center line of the shaft insertion hole is arranged in a vertical plane and is inclined at a lie angle β determined in accordance with the head, and a face angle is set to zero,

a point at which the axial center line of the shaft insertion hole crosses a virtual plane passing through an upper end surface of the neck portion is set to an origin O, and a two-dimensional X-Y coordinate in which a Y-axis is a nodal line between the horizontal plane and the vertical plane, and an X-axis is an axis line passing through the origin O and being perpendicular to the Y-axis is virtually set on the horizontal plane passing through the origin O, and

in the case where the maximum value of the Y-axis in a profile line of the head projected on the X-Y coordinate system is set to y_m and the maximum value of the X-axis is set to x_m , a weight member having a great specific gravity is firmly attached to the sole portion in an area where a center of gravity of the weight

member is set to 0.2 to 0.7 times of the x_m value in the X-coordinate and set to 0.1 to 0.5 times of the y_m value in the Y-coordinate.

10. The golf club head according to claim 1, comprising:

a face portion forming a hitting face hitting a ball;

a crown portion extending from an upper edge of the hitting face and forming an upper surface of the head;

a sole portion extending from a lower edge of the hitting face and forming a bottom surface of the head;

a side portion extending between the crown portion and the sole portion from a toe side edge of the hitting face to a heel side edge of the hitting face through a back face; and

a neck portion formed with a shaft insertion hole to which one end of a shaft is attached, wherein

in a measuring state where an axial center line of the shaft insertion hole is arranged in a vertical plane and is inclined at a lie angle β determined in accordance with the head, and a face angle is set to zero,

a point at which the axial center line of the shaft

insertion hole crosses a virtual plane passing through an upper end surface of the neck portion is set to an origin O, and a two-dimensional X-Y coordinate in which a Y-axis is a nodal line between the horizontal plane and the vertical plane, and an X-axis is an axis line passing through the origin O and being perpendicular to the Y-axis is virtually set on the horizontal plane passing through the origin O, and

in the case where the maximum value of the Y-axis in a profile line of the head projected on the X-Y coordinate system is set to y_m and the maximum value of the X-axis is set to x_m , a thick portion having a greater thickness than the other portions is provided in the sole portion corresponding to an area where the X-coordinate is 0.2 to 0.7 times of the x_m value and the Y-coordinate is 0.1 to 0.5 times of the y_m value.

11. The golf club head according to claim 1, comprising:

a face portion forming a hitting face hitting a ball;

a crown portion extending from an upper edge of the hitting face and forming an upper surface of the head;

a sole portion extending from a lower edge of the

hitting face and forming a bottom surface of the head;

a side portion extending between the crown portion and the sole portion from a toe side edge of the hitting face to a heel side edge of the hitting face through a back face; and

a neck portion formed with a shaft insertion hole to which one end of a shaft is attached, wherein

in a measuring state where an axial center line of the shaft insertion hole is arranged in a vertical plane and is inclined at a lie angle β determined in accordance with the head, and a face angle is set to zero,

a point at which the axial center line of the shaft insertion hole crosses a virtual plane passing through an upper end surface of the neck portion is set to an origin O, and a two-dimensional X-Y coordinate in which a Y-axis is a nodal line between the horizontal plane and the vertical plane and an X-axis is an axis line passing through the origin O and being perpendicular to the Y-axis is virtually set on the horizontal plane passing through the origin O, and

in the case where the maximum value of the Y-axis in a profile line of the head projected on the X-Y coordinate system is set to y_m and the maximum value of the X-axis is set to x_m , a thin portion having a smaller

thickness than the other portions is provided in the sole portion corresponding to an area where the X-coordinate is equal to or less than 0.6 times of the xm value and the Y-coordinate is equal to or more than 0.4 times of the ym value.

12. The golf club head according to claim 1, comprising:

a face portion forming a hitting face hitting a ball;

a crown portion extending from an upper edge of the hitting face and forming an upper surface of the head;

a sole portion extending from a lower edge of the hitting face and forming a bottom surface of the head;

a side portion extending between the crown portion and the sole portion from a toe side edge of the hitting face to a heel side edge of the hitting face through a back face; and

a neck portion formed with a shaft insertion hole to which one end of a shaft is attached, wherein

in a measuring state where an axial center line of the shaft insertion hole is arranged in a vertical plane and is inclined at a lie angle β determined in accordance with the head, and a face angle is set to

zero,

a point at which the axial center line of the shaft insertion hole crosses a virtual plane passing through an upper end surface of the neck portion is set to an origin O, and a two-dimensional X-Y coordinate in which a Y-axis is a nodal line between the horizontal plane and the vertical plane and an X-axis is an axis line passing through the origin O and being perpendicular to the Y-axis is virtually set on the horizontal plane passing through the origin O, and

in the case where the maximum value of the Y-axis in a profile line of the head projected on the X-Y coordinate system is set to y_m and the maximum value of the X-axis is set to x_m , a wavy portion having an increased surface area by an alternative connection between concave portions and convex portions is provided in the sole portion corresponding to an area where the X-coordinate is 0.2 to 0.7 times of the x_m value and the Y-coordinate is 0.1 to 0.5 times of the y_m value.